IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of

GRAY

Serial No. 09/486,183

Filed: February 23, 2000

For: FIBRE REINFORCED COMPOSITES

Atty. Ref.: 540-188

Group: 1733

Examiner: J. Aftergut

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APPEAL BRIEF

On Appeal From Group Art Unit 1733

Stanley C. Spooner
NIXON & VANDERHYE P.C.
8th Floor, 1100 North Glebe Road
Arlington, Virginia 22201-4714
(703) 816-4028
Attorney for Appellant

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December 10, 2004

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APPEAL BRIEF

Sir:

I. REAL PARTY IN INTEREST

The real party in interest in the above-identified appeal is BAE SYSTEMS plc by virtue of an assignment from the inventor to British Aerospace Public Limited Company recorded February 23, 2000 at Reel 11071, Frame 207 and a subsequent assignment from British Aerospace Public Limited Company to BAE SYSTEMS plc recorded October 12, 2000 at Reel 11195, Frame 65.

II. RELATED APPEALS AND INTERFERENCES

There are believed to be no related appeals, interferences or judicial proceedings with respect to the present application and appeal.

III. STATUS OF CLAIMS

Claims 12-24 stand rejected in the outstanding Official Action. Claims 1-11 have been previously cancelled. The Examiner contends that claims 12-24 are obvious in view of the cited prior art references under 35 USC §103 as set forth in the Final Rejection.

IV. STATUS OF AMENDMENTS

An Amendment pursuant to Rule 116 was submitted on November 15, 2004 amending independent claim 12. This Amendment was entered pursuant to the Advisory Action mailed December 1, 2004 (Paper No. 11292004), although the Amendment, according to the Examiner, did not place the application in condition for allowance.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention relates to a method of producing a fiber reinforced composite by the process of pultrusion (a combination of both extrusion and pulling a material through a die).

It is common and well known to make composite structures by utilizing a plurality of layers of reinforcing fibers, often glass, carbon or Kevlar or other aramid fibers, where the fibers are held into place by a plastics matrix material. The most simple manner of making such structures is to wet out each layer, lay it in the appropriate place and then "vacuum bag" the composite to suck out any air which might otherwise be trapped between the layers while they "cure" (the polymerization of the plastic matrix is called "curing"). Excess resin can also be removed by this process, permitting a strong lightweight structure to be molded.

Continuous molding processes have been developed which can utilize tapes or fibers which are either pre-impregnated with the plastic matrix material (called pre-preg) or which are dipped in a bath of resin material and then laid one on top of the other in a continuous fashion so that the end product is removed from a curing chamber as a solid composite structure. Generally such end products are placed in a mold so as to take the desired shape of the mold during curing.

An offshoot of the continuous production of a structure is the pultrusion method of construction. Pultrusion is the well known process in which fibers or other materials are saturated with a liquid plastics matrix material are pulled through a die and partially or completely cured in the die, thereby forcing the material to adopt a specific cross-sectional shape and the final curing of such a pultruded product so as to retain the desired cross-sectional shape.

While it is often desirable to maintain the exact same cross-sectional shape (so that complex movable part dies are not needed), it is also desirable to be able to vary the strength characteristics of the final product along the length of the product. This cannot be accomplished with any known prior art pultrusion process.

Appellant has solved the problem of creating pultruded products which have variable strength characteristics along its length by incorporating additional fibers 20 in addition to the normal series of reinforcing fibers 14 in a pultrusion process (as shown in Figure 1 and discussed on page 3 of the specification), where the additional fibers serve to vary the strength characteristics along the length of the finished product. More fibers and/or fibers having different strength and flexibility characteristics can be added changing the strength characteristics of the resultant product at that location.

Critical to the claimed process, in order to avoid stress concentrations in the resultant products, the additional fibers are distributed in and amongst the regular reinforcing fibers. As set out in the independent claim, the additional fibers are added by "splicing, interlacing and otherwise distributing " the additional fibers in the reinforcing fibers prior to the pultrusion drawing step of passing those fibers through a pultrusion die 38. Thus, the additional fibers will vary the strength characteristics of the final product "substantially without altering the cross-sectional area thereof." The advantage of this method is that by splicing,

interlacing or otherwise distributing the additional fibers in amongst the conventional reinforcing fibers used in the pultrusion process, a greater number of fibers or fibers having different structural characteristics can be added where needed to define the required varying strength characteristics of the final product. The distribution of those added fibers amongst the regular reinforcing fibers avoids stress concentrations.

These additional fibers are also added and easily carried through the pultrusion die in a manner that does not alter or modify the cross-sectional area of the final product. Thus, a single die can be used to produce a multitude of products having the same final (cured) cross-sectional area and shape, but with widely varying strength characteristics by merely adding fibers which to the conventional reinforcing fibers during the pultrusion process.

Independent claim 12 recites Appellant's claimed method of producing a fiber reinforced composite by pultrusion where the composite product has variable strength characteristics along its length. In claim 12, Appellant specifically defines the drawing step as drawing through a pultrusion die a series of reinforcing fibers to form a pultruded fiber composite product.

Appellant's claim 12 also recites (originally in "step-plus-function" format) the step of incorporation of additional fibers (fibers in addition to the "reinforcing fibers" set forth in the drawing step) in order to "vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof."

Appellant's original claim 12 recited the "incorporating step" and recited the "variable strength characteristics" without altering the cross-sectional area, but did not indicate the specific steps or the aspects of the steps by which the variable strength occurs. In accordance with the "step-plus-function" interpretation required by the sixth paragraph of 35 USC §112, for the proper interpretation of the "incorporating" step, one must review the corresponding steps in the application which support the functional limitation in the incorporating step.

The required "step-plus-function" interpretation was brought to the Examiner's attention in Appellant's Rule 116 Amendment. However, in order to avoid any misunderstanding, Appellant incorporated into claim 12 the limitations in the incorporating step indicating that incorporation was by "at least one of splicing, interlacing and otherwise distributing in the reinforcing fibers prior to the drawing step additional fibers in order to vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof."

The amendment under Rule 116 was entered by the Examiner for the purpose of appeal (see the Advisory Action mailed December 1, 2004 (Paper No. 11292004)). The Examiner, however, did not believe that independent claim 12 or claims dependent thereon were patentable over the cited prior art because he states in the Advisory Action that the prior art teaches splicing or interlacing or otherwise distributing additional reinforcement fibers in a pultrusion operation. It

is this misunderstanding of what the prior art teaches and does not teach which is at issue in this appeal.

Thus, claim 12 specifies the two steps of "drawing" and prior to the drawing step, the step of "incorporating" in order to provide **"a fiber reinforced composite by pultrusion having variable strength characteristics along its length."** The incorporating step requires **"at least one of splicing, interlacing or otherwise distributing [the additional fibers] in the reinforcing fibers prior to the drawing step"** in order to **"vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof."** The additional steps of applying plastics matrix material to the fibers and curing the plastics matrix to form the finished composite are also recited.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 12-14, 16, 18, 20 and 21 stand rejected under 35 USC §102 as anticipated by or in the alternative, under 35 USC §103, as obvious over Vane (U.S. Patent 5,055,242) for the reasons set forth in the Official Action mailed January 6, 2004 (Paper No. 121803) and specifically references the logic of paragraph 4 in that Official Action.

Claims 12-14, 16, 18, 20 and 21 are also rejected under 35 USC §103 as being unpatentable over Vane in view of any one of Kalnin (U.S. Patent 3,691,000), Durand (U.S. Patent 5,882,460) or Gorthala (U.S. Patent 6,007,655).

This rejection in the Final Rejection is referenced as being in the previous Official Action noted above, but at paragraph 6. A review of paragraph 6 indicates that it incorporates the rejection based upon Vane in paragraph 4 of the Action.

Accordingly, if the Examiner's rejection of claims 12-14, 16, 18, 20 and 21 as being anticipated or obvious in view of the Vane reference is incorrect, then all rejections in the Final Rejection fail.

VII. ARGUMENT

Appellants arguments include the fact that the Examiner has failed to point out how or where any of the cited prior art references teach the production of a composite material by pultrusion where the material has "variable strength characteristics along its length."

Central to the Examiner's failure is the apparent misunderstanding of that which is taught in the Vane reference, as well as the Examiner's apparent misunderstanding of Appellant's recited incorporating step which must be taken to require varying "the strength characteristics of the final product substantially without altering the cross-sectional area thereof." With a proper interpretation of Appellant's "incorporating" step and a proper understanding of the Vane reference, it is clear that there is no teaching of Appellant's claimed limitations contained in the cited prior art references.

1. Appellant's "incorporating" step requires the addition of fibers "in order to vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof"

Appellant's independent claim 12, from which claims 13-24 ultimately depend, recites a drawing step and an incorporating step, where the incorporating step occurs "prior to the drawing step" and involves the "splicing, interlacing and otherwise distributing in the reinforcing fibers" some additional fibers in order to "vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof."

Taken broadly, Appellant's incorporating step may be considered to be in "step-plus-function" format subject to the requirements of the sixth paragraph of 35 USC §112. The manner in which additional fibers are incorporated must be limited to a manner which varies "the strength characteristics of the final product substantially without altering the cross-sectional area thereof."

Prior to the entry of the Amendment under Rule 116, this "step-plus-function" format required the Examiner to review Appellant's specification for the corresponding disclosure of the ways in which fibers could be incorporated in order to "vary the strength characteristics" as required by the claim. This discussion is found in Appellant's specification on page 3, lines 11-14 and specifies that the additional fibers are provided either spliced between lengths of reinforcing fibers or interlaced or otherwise distributed amongst the reinforcing fibers.

In order to avoid any misunderstanding on the Examiner's part as to how Appellant's independent claim 12 should be construed, this "step-plus-function" discussion was set out in an Amendment under Rule 116, but, in addition, Appellants also proposed amending claim 12 to literally recite in the claim the fact that the incorporating step was "at least one of splicing, interlacing and otherwise distributing" the additional fibers amongst the reinforcing fibers.

The Examiner entered the amendment for the purposes of appeal and the incorporating step now recites the step which causes the variation in "the strength characteristics of the final product substantially without altering the cross-sectional area thereof." Thus, the Examiner must, in order to properly construe the claim, appreciate that the incorporating step recites the step which has, as a result, a "variable strength characteristic" along the length of a pultrusion product.

Thus, in order to properly anticipate or render obvious Appellant's independent claim 12 (and claims dependent thereon), it is incumbent upon the Examiner to demonstrate how or where a single prior art reference (in the case of the anticipation reference) or a plurality of prior art references (in the case of an obviousness rejection) teach not only Appellant's "drawing" step, but also the specifically recited "incorporating" step such that a reinforced composite is produced by "pultrusion having variable strength characteristics along its length" as recited in Appellant's method claim.

As will be seen, the Examiner has failed to point out how or where Appellant's claimed "incorporating" step is disclosed in any one or more references.

2. The Examiner has misapprehended the teachings of U.S. Patent 5,055,242 (Vane)

The Examiner cites the Vane reference as the basis for both anticipation and obviousness rejections of claims 12-14, 16, 18, 20 and 21. All rejections of all other pending claims are based upon the primary Vane reference in combination with multiple other references. Thus, if the Vane reference does not anticipate or render obvious claim 12, then all of the Examiner's rejections fall.

The Vane reference teaches at least two very different embodiments. In Figure 1, the Vane reference teaches **a non-pultrusion product** by which a number of layers of fibers are built up with different layers having different fiber orientations and with the invention being the stitching together of the layers of fibers. Figure 1 also shows that reinforcing "pieces or patches 3a, 4a of reinforcing material can be inserted between any of the adjacent layers 1-6 prior to stitching . . . to provide additional reinforcement or thickness of a required size and shape and at required locations in the finished articles." (Vane, Col. 5, lines 60-65)

The Examiner presumably agrees that the method of Figure 1 is the conventional layering method of composite lay-up and does not involved any

pultrusion step. In fact, the Vane reference at column 5, lines 60-65, specifies that the pieces 3a and 4a of reinforcing material are added to provide "additional reinforcement **or thickness** of a required size and shape and at required locations in the finished article." (Emphasis added). Quite clearly, the method of making a composite structure in accordance with Vane's Figure 1 provides for and suggests the desirability of a variation in thickness of the composite product.

Appellant's independent claim 12 specifies an incorporating step which provides additional fibers to vary the strength characteristics of the final product "substantially without altering the cross-sectional area thereof." Appellant's claimed method is a pultrusion method of creating a fiber reinforced composite where such pultrusion methods provide a final product which has no substantial variation in the cross-sectional area of the output. However, Vane's conventional fiber reinforced composite method, as shown in Figure 1, provides for an increased thickness at various required locations in the finished articles, and thus is inconsistent with the constant cross-sectional area limitation of claim 12. Thus, Figure 1 and its disclosure of reinforcing patches 3a and 4a is unrelated to the pultrusion method of creating fiber reinforced composite products and teaches a variation in the cross-sectional area of the product (at least in the vicinity of the patches 3a and 4a.

Vane does disclose a rudimentary pultrusion production process in Figure 3. However, a review of Figure 3 illustrates that the reinforcing material 13 is presumably analogous to Appellant's claimed "reinforcing fibers" and these are treated in precisely the manner of conventional pultrusion products. The benefit of such pultrusion method is that the output products essentially have **a constant cross-sectional area and shape**. In the discussion of the Figure 3 process at column 6, lines 28-43, Vane specifically teaches that the reinforcing material 13 may comprise layers 7, 8 and/or yards or threads 10a of thermoplastic material (an apparent reference to the reinforcing material indicated and described in conjunction with Figure 1. The thermoplastic material 10a, as discussed in Figure 1, could be used if a heated die is used and thereby eliminating the need for additional resin matrix material).

However, nowhere in the pultrusion process of Figure 3 is there disclosed any injection of additional fibers in the incorporating step or any other step which would have **the effect of varying the strength characteristics of the final product along its length**, and no disclosure of any step which would vary the strength characteristics **without altering the cross-sectional area thereof**. The Examiner simply misapprehends that the teaching of reinforcement patches 3a and 4a in Figure 1 of Vane (in order to provide "thickness of a required size and shape" in a conventional bulk molding process) could be combined with the

conventional pultrusion process in Figure 3 which provides substantially constant cross-sectional area.

While this issue has been previously raised with the Examiner, the Examiner has failed to point out how or where one of ordinary skill in the art would simply take the patches 3a and 4a as shown in conjunction with the bulk molding process of Figure 1 in Vane and add them to the pultrusion process in Figure 3 of Vane.

Appellant has previously pointed out that it is clearly obvious to those of ordinary skill in the art that one would not do that, as such patches would result in a step change in the thickness of the material as it passes into the pultrusion die, and the likely consequence of the step change is breakage of the die or more likely breakage of the product being pultruded through the die. It is noted that pultrusion is a combination of pulling and extrusion and that if the drag on the material passing through the die exceeds the tensile strength of the product leaving the die, the product itself will fracture.

The Examiner complains that Appellant has provided no evidence of this consequence. The burden is not upon the Applicant to provide evidence which is known to those of ordinary skill in the art. Rather, the burden is on the Examiner to establish why he believes one would take the addition of patches from the bulk molding process of Figure 1 and add those to the pultrusion process disclosed in Figure 3. There is no evidence provided by the Examiner that such intermingling

of process step parameters is standard procedure in the pultrusion production processes, nor is there any explanation by the Examiner of why the patches 3a and 4a used in the bulk molding process of Figure 1 to provide a "thickness of a required size," why these same patches if applied to the pultrusion process of Figure 3, would not similarly provide a cross-sectional area which is different (thereby violating Appellant's pultrusion claim requirement of "substantially without altering the cross-sectional area thereof"). Moreover, such a step change would also probably introduce a stress concentration in the resultant product.

In the Final Rejection and in particular the portion entitled "Response to Arguments," the Examiner recites the abstract and the claims in the Vane reference. However, nowhere does the Examiner indicate how or where Vane teaches a pultrusion process in which the incorporating step requires the addition of patches or any other type of "additional fiber" as recited in Appellant's claim.

The Examiner suggests on page 4 that claims 1, 16 and 17 of the Vane patent contain a disclosure of a pultrusion process which has an incorporating step prior to the drawing step. However, a detailed review of Vane's claim 1 shows that it merely recites providing a plurality of regular reinforcing layers of fibers which are later stitched together, passed through a wetting station, and then passing the resultant wetted reinforcing material to a forming station (a mold) and then curing the matrix material to produce the desired composite product. The claim 1 process in Vane says nothing about (a) any "additional fibers" or that (b)

the additional fibers could be added during a pultrusion process or that (c) they could be added in a pultrusion process so as to not substantially alter the cross-sectional area of the resultant composite product, or (d) that they could be used to vary the strength characteristics along the length of the product.

The Examiner correctly points out that Vane's claim 16 adds the limitation to claim 1 that the wetted reinforcing material is formed by passing it through a die and that Vane's claim 17 further limits claim 16 by pointing out that the die is a pultrusion die. However, combining Vanes claims 1, 16 and 17, there is still no disclosure supporting the Examiner's contention that Vane teaches the addition of fibers during a pultrusion process in order to **vary the strength characteristics of the final product** "substantially without altering the cross-sectional area thereof." Thus, the Examiner's argument that Vane's claims somehow support his misreading of the Vane reference lacks any evidentiary support.

In an attempt to rebut Appellant's argument that adding patches 3a and 4a from the Figure 1 process in Vane to the Figure 3 pultrusion process in Vane would necessarily clog the die and the pultrusion operation would be inoperable, the Examiner resorts to citing 35 USC §282. That statute has nothing to do with the teaching contained in an issued patent and instead holds that "a patent shall be presumed valid." This statute relates to the legal presumption of validity of an issued patent. There is nothing in this statute which supports the Examiner's contention that his misunderstanding of the Vane reference, i.e., the addition of

patches 3a and 4a from Figure 1 to the pultrusion process of Figure 3 must be operable. Section 282 of the statute has nothing to do with the operability of a unique combination of elements **not disclosed anywhere in the patent** and created only in the mind of the Examiner. Thus, the Examiner's citation of the patent validity statute is completely irrelevant to any issue before this Board.

In view of the above, claim 12 is clearly not anticipated, nor is it rendered obvious in view of the Vane reference.

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

The Court of Appeals for the Federal Circuit has held that "the PTO has the burden under §103 to establish a *prima facie* case of obviousness." *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The PTO "can satisfy this burden only by showing some objective teaching in the prior art . . . ." *Id.*

Not only has the Examiner failed to point out how or where Vane teaches the "at least one of splicing, interlacing and otherwise distributing in the reinforcing fibers prior to the drawing step additional fibers," he has also failed to point out where there is any teaching to do so "in order to vary the strength characteristics of the final product substantially without altering the cross-

sectional area thereof" as required by applicant's claim 12. As a result, Vane can not support either an anticipation rejection under §102 or an obviousness rejection under §103.

Because Vane by itself neither anticipates nor renders obvious the subject matter of claims 12-14, 16, 18, 20 and 21, the Examiner has failed to meet his burden of proof with respect to the rejection of these claims as being anticipated or obvious.

The Examiner also rejects claims 12-14, 16, 18, 20 and 21 and all other dependent claims based upon varying combinations of additional prior art, all of which incorporate Vane as the primary reference and suggest that any one of nine cited prior art references, as well as Appellants' own admitted prior art, combine to form the basis for rejections of those dependent claims. However, most importantly, the Examiner fails to point to any other reference which teaches or suggests the "incorporating" step which add additional fibers "by at least one of splicing, interlacing and otherwise distributing [the additional fibers] in the reinforcing fibers" or any other method step which varies "the strength characteristics of the final product without substantially altering the cross-sectional area thereof." These positively recited aspects of independent claim 12 have not been identified by the Examiner in any prior art reference.

In terms of the additional rejections in sections 4 - 8 of the Final Rejection, the Examiner indicates that the Vane reference is applied in the manner of

paragraph 4 in the Official Action dated January 6, 2004. Paragraph 4 in the January 6, 2004 Official Action is identical to paragraph 2 in the Final Rejection and thus has been covered above.

It is further noted that the Examiner has not alleged that any of the cited additional prior art references contain any teaching with respect to the incorporation of additional fibers into the reinforcing fibers in a pultrusion process. The Examiner does not contend that any of the cited prior art references, other than Vane, provide a fiber reinforced composite product having "variable strength characteristics along its length."

The Examiner has not identified any prior art product or process which teaches the incorporation "by splicing, interlacing or other otherwise distributing" additional fibers in amongst reinforcing fibers prior to a pultrusion drawing step in order to "vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof" as required by all of Appellant's claims which are dependent from claim 12.

The Court of Appeals for the Federal Circuit has consistently held something more other than merely accumulating elements from prior art references is needed in order to support an obviousness rejection. In the case of In re Rouffet, 47 USPQ2d 1453, 1457-8 (Fed. Cir. 1998) the Court of Appeals for the Federal Circuit held that

> "to prevent the use of hindsight based on the invention to defeat patentability of the invention, **this court requires the examiner to show a motivation** to combine the references that create the case of obviousness. In other words, **the Examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." (emphasis added).

The Examiner has failed to point out how or where in any cited prior art reference, including the Vane reference, there is any indication that the problem being solved is the provision of a fiber reinforced composite created by the pultrusion method which has "variable strength characteristics along its length" and yet has a constant cross-sectional area. This is the problem solved by Appellant's unique method, and this problem is not identified, let alone addressed, in any of the cited prior art references.

Thus, while the Examiner is free to pick and choose aspects of the 10 cited references (and applicant's admitted prior art, which "admitted prior art" is not actually identified anywhere in the Final Rejection), the burden is on the Examiner to show some motivation or reason for combining these references in order to solve the problem addressed and solved by the current invention. The Examiner has completely failed to provide any motivation or reason and indeed hasn't shown any recognition of the problem or that any of the prior art references is attempting to solve that problem.

Accordingly, the Examiner has simply failed to support not only his rejection of independent claim 12, but also the rejections of claims 13-24 dependent thereon.

VIII. CONCLUSION

Appellant has demonstrated that the primary reference Vane contains no teaching or suggestion of a pultrusion produced product which has a substantially constant cross-sectional area that is made by incorporating additional fibers in order to vary the strength characteristics of the final product. Appellant has shown that the Examiner misunderstands or misconstrues the Vane reference by taking the disclosure of the use of patches for the Figure 1 bulk molding process and adding them to the Figure 3 pultrusion process, even though such patches will provide a variation in thickness of the resultant material, as clearly taught in the Vane reference (column 5, lines 60-65).

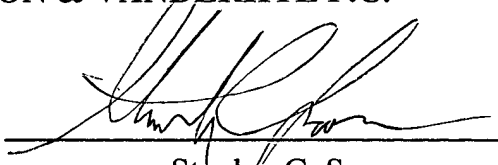
The Examiner has not identified where in any other prior art reference the details of Appellants' claimed pultrusion process are disclosed ("additional fibers," "splicing, interlacing and otherwise distributing") so as to produce the unique product ("having a varying strength characteristics" and "substantially without altering the cross-sectional area"). Therefore, the Examiner has failed to provide no support for his contentions of anticipation and/or obviousness. Because the burden of establishing an anticipation and/or an obviousness rejection

is on the Examiner, the Examiner's failure to meet that burden is clear evidence of the patentability of the pending claims.

Thus, and in view of the above, the rejection of claims 12-24 under 35 USC §102 and/or §103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

Stanley C. Spooner
Reg. No. 27,393

SCS:kmm
Enclosures
Appendix A - Claims on Appeal

CLAIMS APPENDIX

12. A method of producing a fiber reinforced composite by pultrusion having variable strength characteristics along its length, said method comprising the steps of:

drawing through a pultrusion die a series of reinforcing fibers to form a pultruded fiber composite product

incorporating by at least one of splicing, interlacing and otherwise distributing in the reinforcing fibers prior to the drawing step additional fibers in order to vary the strength characteristics of the final product substantially without altering the cross-sectional area thereof, a plastics matrix material being applied around the fibers and allowed to solidify to form the finished composite.

13. A method according to claim 12 in which the additional fibers have a characteristic different from that of the said reinforcing fibers.

14. A method according to claim 13 in which the said characteristic is selected from the group fiber tenacity and fiber modulus.

15. A method according to claim 12 in which the additional fibers are spliced between discrete lengths of the reinforcing fibers.

16. A method according to claim 12 in which the additional fibers are interlaced amongst continuous said reinforcing fibers.

17. A method according to claim 12 in which the plastics matrix material is applied to the additional fibers during the drawing step.

18. A method according to claim 12 in which the additional fibers are pre-impregnated with a plastics matrix material before said drawing step.

19. A method according to claim 12 in which the reinforcing fibers are in the form of a woven web.

20. A method according to claim 12 in which the reinforcing fibers are in the form of a non-woven web.

21. A composite structural member produced according to the method of claim 12.

22. A composite structural member according to claim 21 comprising an aircraft skin stringer.

23. An aircraft airfoil incorporating a composite structural member according to claim 21.

24. An aircraft containing a composite produced according to the method of claims 12.